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Emphasis on tires

Applying FEM to tire analysis

Water-based tire tread adhesives

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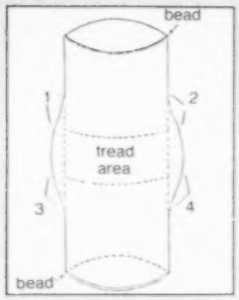

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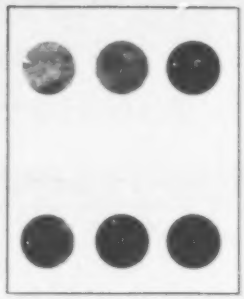

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by Jon Menough, contributing technical services editor. The recent Rubber Division meeting unveiled a new material — a blending of silicone rubber and EPDM, which offers opportunities for various applications.

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by N. Yoshimura, Bridgestone Corp. FEM has been used for years in tire analysis. Author discusses how this tool can be incorporated into daily tire design procedures.

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by A.K. Bhowmick, India Institute of Technology. Article addresses some of the difficulties of carbon black classifications and offers suggestions to alleviate the problems.

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by Robert F. Ohm, R.T. Vanderbilt Co. Curative diffusion can exhibit beneficial or detrimental effects. Several examples of both are examined in the areas of bloom, partitioning in blends, adhesion and vulcanization.

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Cover

Courtesy of Mobay Chemical Corp.

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Essex Chemical announced first quarter net income amounted to $2.4 million on net sales of $45.7 million.

Exxon reported net income of $1.3 billion on revenues of $23.1 billion for the first quarter.

BFGoodrich reported net income of $2.3 million on revenues of $798.7 million for the first quarter.

Goodyear reported first quarter net income of $86.7 million on sales of $2.46 billion.

The **Hoechst Group** announced first quarter profits before taxes of $259 million on sales of $3.4 billion.

Jones & Vining announced net earnings for the first quarter of $578 thousand on sales of $9.5 million.

Lubrizol announced first quarter net income of $19.4 million on revenues of $255.5 million.

Lydall reported first quarter net income of $1 million on net sales of $28.1 million.

Myers Industries announced net income of $762 thousand on net sales of $18.8 million for the first quarter.

NL Industries reported first quarter net income of $4.4 million on sales of $327 million.

Park-Ohio Industries announced first quarter net income of $555 thousand on net sales of $56.1 million.

Sheller-Globe reported earnings of $11.3 million for the second quarter on sales of $245.7 million.

Standard Products reported net income for the third quarter of $5.9 million on sales of $100.1 million.

Sybron reported earnings of $2.6 million on sales of $126.4 million for the first quarter.

Uniroyal announced income for the first quarter of $21 million on sales of $508 million.

Yokohama Rubber reported ordinary income of ¥3.8 billion on sales of ¥280.3 billion for 1984.

Markets, news

Saying "This agreement meets the union's objectives for 1985 and the next three years," United Rubber Workers president Milan Stone inked an agreement with BFGoodrich which set the pattern for the other Big Four U.S. rubber companies, Goodyear, Firestone and Uniroyal. The agreement provides for a general wage increase over the three years of 43 cents (25 cents the first year, 10¢ and 8¢ the following years) and maintains the URW's .26 cost of living allowance formula which is estimated to yield $1.89 in raises over the three years, assuming a 5% inflation rate. The union and management worked out revised medical coverage programs with the companies as well. Some 36,000 workers are included in the Big Four contracts out of a total membership of 130,000.

Thermoplastic elastomers should grow at a 7.5% per year rate through 1989, reaching a total of 457 million pounds, according to a report by the Business Communications, Co., Stamford, CT. In 1984, total consumption of TPE's reached 319 million pounds. Styrene based materials accounted for 165 million pounds, urethanes 62 million, olefins 58 million, copolyester-polyethers 19 million and others 15 million. Copolyester-ethers will show the biggest gain, growing at 12.3% during the time frame. Olefinics growth rate is pegged at 10.6%, urethanes at 6.3% and styrene based TPE's at 5.1%.

The aftermarket for automotive parts in Europe will be nearly stalled through 1994, growing less than 1% a year, according to a study by Frost & Sullivan. Longer life of replacement parts, a decelerating increase in the number of cars and the shrinkage of the average distance driven annually are given as causes for the slight growth.

RMA tire shipments & production report through February 1985 (figures in thousands of units)

Passenger Tires	1985	1984	% Change
Shipments			
Original Equipment	9,264	8,655	+7.04
Radial	7,740	7,238	+6.94
Replacement	19,621	20,823	−5.77
Radial	15,768	15,842	−0.47
Export	1,184	1,028	+15.18
Radial	948	743	+27.59
Total	30,069	30,506	−1.43
Radial	24,456	23,823	+2.66
Production	29,296	28,308	+3.49
Radial	23,138	20,710	+11.72
Truck & Bus Tires			
Shipments			
Original Equipment	1,202	1,209	+0.58
Radial	760	624	+21.79
Replacement	4,515	4,548	−0.73
Radial	1,800	1,587	+13.42
Export	260	217	+19.82
Radial	134	96	+39.58
Total	5,997	5,974	+0.05
Radial	2,694	2,307	+16.78
Production	6,460	5,937	+8.81
Radial	2,733	2,150	+27.12

RMA rubber report through January 1985 (figures in metric tons)

	Cumulative 1985	Cumulative 1984	% Change 85 vs 84
New Rubber			
New rubber available	260,551	288,548	−9.70
Imports	90,657	109,350	−17.09
Exports	27,943	27,930	.05
Apparent Consumption	227,559	247,245	−7.96
Natural Rubber			
Imports	72,782	89,254	−18.46
Exports	3,067	2,217	38.34
Apparent Consumption	71,759	73,745	−2.69
% Total new rubber	31.53	29.82	
Synthetic Rubber			
Production	169,804	179,198	−5.19
Imports	17,875	20,096	−11.05
Exports	24,876	25,713	−3.26
Apparent Consumption	155,799	173,499	−10.20
% Total new rubber	68.46	70.17	
SBR			
Production	78,738	84,589	−6.92
Imports	5,464	6,270	−12.85
Exports	6,531	8,099	−19.36
Apparent Consumption	70,512	80,826	−12.76
Nitrile			
Production	5,484	5,7511	−4.64
Imports	1,167	948	23.10
Exports	676	669	1.05
Apparent Consumption	5,140	5,763	−10.81
Polybutadiene			
Production	29,382	30,298	−3.02
Imports	4,288	4,425	−3.10
Exports	1,474	2,077	−29.03
Apparent Consumption	31,706	31,685	.07
Ethylene-Propylene			
Production	17,550	14,329	22.48
Imports	179	57	214.04
Exports	2,732	1,872	45.94
Apparent Consumption	16,269	15,383	5.76
Butyl, Polychloroprene, Polyisoprene, Silicone and other Synthetic Elastomers			
Production	36,741	44,232	−12.41
Imports	6,777	8,396	−19.28
Exports	13,463	12,996	3.59
Apparent Consumption	32,172	39,841	−19.25